

WHAT IS CLAIMED IS:

1. An image forming apparatus for executing various jobs transmitted from an information processing apparatus, the image forming apparatus comprising:
 - 5 process analysis means for analyzing a process transmitted from said information processing apparatus; job generation means for generating a job according to the analysis of process by said process analysis means;
 - 10 job process means including job management means for managing information constituting a job, binder management means for managing information constituting a binder and document management means for managing information constituting a document, and adapted to process the job generated by said job generation means;
 - 15 document generation means for dividing the job generated by said job generation means into a smaller document unit thereby generating a document;
 - 20 document process means for processing a document generated by said document generation means;
 - 25 page generation means for dividing the document generated by said document generation means into a smaller page unit thereby generating a page;
 - page process means for processing a page generated by said page generation means;
 - band generation means for dividing the page generated by said page generation means into a smaller

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band unit thereby generating a band;

band process means for processing a band generated by said band generation means; and

5 device use request arbitration means for arbitrating the requests for using a device from said document generation means, said document process means, said page process means and said band process means;

wherein at least one of said document process means, said page process means and said band process 10 means executes the process according to the formats of input data and output data in said document process means, said page process means and said band process means.

15 2. An apparatus according to claim 1, wherein said job management means processes a job constituted by at least a binder.

20 3. An apparatus according to claim 2, wherein said binder management means processes a binder constituted by at least a document.

25 4. An apparatus according to claim 3, wherein said document management means processes a document constituted by at least a page.

5. An apparatus according to claim 1, wherein said

job management means executes process in a book binding mode in case of detecting the book binding mode.

6. An apparatus according to claim 1, wherein said
5 job management means processes the number of output copies and the order of output (collation).

7. An apparatus according to claim 1, wherein said binder management means processes the number of output
10 copies and the order of output (collation).

8. An apparatus according to claim 1, wherein said document management means processes the number of output copies and the order of output (collation).

15 9. An apparatus according to claim 1, wherein said job management means processes a finishing operation including at least one of stapled sorting, shift sorting and rotated sorting.

20 10. An apparatus according to claim 1, wherein said binder management means processes a finishing operation including at least one of stapled sorting, shift sorting and rotated sorting.

25 11. An apparatus according to claim 1, wherein said document management means processes a finishing

operation including at least one of stapled sorting,
shift sorting and rotated sorting.

12. An apparatus according to claim 1, wherein each
5 of said job management means, said binder management
means and said document management means is capable of
processing a finishing operation including at least one
of stapled sorting, shift sorting and rotated sorting,
and management means designated for finishing among
10 said job management means, said binder management means
and said document management means generates an output
document constituting the output address for said
document process means, said page process means or said
band process means.

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13. An apparatus according to claim 12, wherein,
plural management means are designated for finishing,
such designation is analyzed in the order of said job
management means, said binder management means and said
20 document management means and the designation of
finishing is rendered effective only in the management
means of the highest rank among the management means
designated for finishing, whereby said management means
of the highest rank generates said output document
means while the designation of finishing is rendered
ineffective for the management means positioned in the
25 lower ranks than said management means of the highest

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rank.

14. A control method for an image forming apparatus
for executing various jobs transmitted from an
5 information processing apparatus, the method
comprising:

a process analysis step of analyzing a process
transmitted from said information processing apparatus;

10 a job generation step of generating a job according
to the analysis of process by said process analysis
step;

15 a job process means including a job management step
of managing information constituting a job, a binder
management step of managing information constituting a
binder and a document management step of managing
information constituting a document, and adapted to
process the job generated by said job generation step;

20 a document generation step of dividing the job
generated by said job generation step into a smaller
document unit thereby generating a document;

a document process step of processing a document
generated by said document generation step;

25 a page generation step of dividing the document
generated by said document generation step into a
smaller page unit thereby generating a page;

a page process step of processing a page generated
by said page generation step;

a band generation step of dividing the page generated by said page generation step into a smaller band unit thereby generating a band;

5 a band process step of processing a band generated by said band generation step; and

a device use request arbitration step of arbitrating the requests for using a device from said document generation step, said document process step, said page process step and said band process step;

10 wherein at least one of said document process step, said page process step and said band process step executes the process according to the formats of input data and output data in said document process step, said page process step and said band process step.

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15. A computer program to be executed by a computer of an image forming apparatus for executing various jobs transmitted from an information processing apparatus, the program comprising:

20 a code of a process analysis step of analyzing a process transmitted from said information processing apparatus;

25 a code of a job generation step of generating a job according to the analysis of process by said process analysis step;

a code of a job process means including a job management step of managing information constituting a

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job, a binder management step of managing information constituting a binder and a document management step of managing information constituting a document, and adapted to process the job generated by said job generation step;

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a code of a document generation step of dividing the job generated by said job generation step into a smaller document unit thereby generating a document;

a code of a document process step of processing a

10 document generated by said document generation step;

a code of a page generation step of dividing the document generated by said document generation step into a smaller page unit thereby generating a page;

a code of a page process step of processing a page generated by said page generation step;

a code of a band generation step of dividing the page generated by said page generation step into a smaller band unit thereby generating a band;

a code of a band process step of processing a band generated by said band generation step; and

a code of a device use request arbitration step of arbitrating the requests for using a device from said document generation step, said document process step, said page process step and said band process step;

25 wherein at least one of the code of said document process step, the code of said page process step and the code of said band process step executes the process

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according to the formats of input data and output data in the code of said document process step, the code of said page process step and the code of said band process step.

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17. An image forming apparatus capable of communicating with an information processing apparatus, comprising:

reception means for receiving process information
10 from said information processing apparatus;

job generation means for generating a job based on the process information received by said reception means;

15 binder generation means for generating plural binders based the job generated by said job generation means;

document generation means for generating plural documents based on the binder generated by said binder generation means;

20 determination means for determining a device to be used, among plural device provided in said image forming apparatus, based on the process information received by said reception means; and

assignment means for assigning the document generated by said document generation means to the device determined by said determination means.

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18. An apparatus according to claim 17, further comprising:

page generation means for generating plural pages based on the document generated by said document generation means;

wherein said assignment means assigns the page generated by said page generation means to the device determined by said determination means.

10 ~~19.~~ An apparatus according to claim 18, further comprising:

band generation means for generating plural bands based on the page generated by said page generation means;

15 wherein said assignment means assigns the band
generated by said band generation means to the device
determined by said determination means.

19.
20. A control method for an image forming apparatus capable of communicating with an information processing apparatus, the method comprising:

a reception step of receiving process information from said information processing apparatus;

a job generation step of generating a job based on
the process information received by said reception
step;

a binder generation step of generating plural

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binders based the job generated by said job generation step;

a document generation step of generating plural documents based on the binder generated by said binder generation step;

5 a determination step of determining a device to be used, among plural device provided in said image forming apparatus, based on the process information received by said reception step; and

10 an assignment step of assigning the document generated by said document generation step to the device determined by said determination step.

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15 21. A computer program to be executed by a computer of an image forming apparatus capable of communicating with an information processing apparatus, the program comprising:

a reception step of receiving process information from said information processing apparatus;

20 a job generation step of generating a job based on the process information received by said reception step;

a binder generation step of generating plural binders based the job generated by said job generation step;

25 a document generation step of generating plural documents based on the binder generated by said binder

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generation step;

a determination step of determining a device to be used, among plural device provided in said image forming apparatus, based on the process information received by said reception step; and

5 an assignment step of assigning the document generated by said document generation step to the device determined by said determination step.

10 *22.* ~~22.~~ A computer readable memory medium storing the computer program according to claim 21.

23. ~~23.~~ An image forming apparatus capable of communicating with an information processing apparatus, 15 comprising:

reception means for receiving process information from said information processing apparatus;

20 job generation means for generating a job based on the process information received by said reception means;

generation means for generating process units of a hierarchic structure based on the job generated by said job generation means;

25 determination means for determining a device to be used, among plural device provided in said image forming apparatus, based on the process information received by said reception means; and

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Sub A assignment means for assigning the process unit generated by said generation means to the device determined by said determination means.

5 *24.* An image forming apparatus capable of communicating with an information processing apparatus, comprising:

reception means for receiving process information from said information processing apparatus;

10 job generation means for generating a job based on the process information received by said reception means;

generation means for generating an instance of a hierachic structure based on the job generated by said job generation means;

determination means for determining a device to be used, among plural device provided in said image forming apparatus, based on the process information received by said reception means; and

20 assignment means for assigning the instance generated by said generation means to the device determined by said determination means.